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# THE TRAUMATIC NEUROSIS: NATURE AND MANAGEMENT: SOME FORENSIC ASPECTS

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SHOWN IN THE CASE OF HILL *V.S.* CHICAGO MILWAUKEE AND ST. PAUL R. R. CO.

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TOM A. WILLIAMS<sup>1</sup>

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## *Psychological Fundamentals.*

Traumatic neurosis is a complete misnomer: the condition is psychogenetic; therefore it is not neural; and the trauma is not physical. An injury in itself cannot cause a "neurosis," meaning a psychosis. This condition occurs only when the patient broods over the injury, and imagines that he is a very sick person. To represent to oneself feelingly a disease, is to make oneself feel very sick, even although the disease one conceives may not itself be manifested with verisimilitude. The patient then, having the idea that he is sick, acts so and feels so; so that after a while he actually is sick.

This is on account of the fact that the very idea of pain is capable of arousing the concomitants of pain, viz., depression of vegetative functions. This occurs because of the emotional reactions inseparable from the concepts which experience has associated with them. The situation is merely that of the dog in which Pavlov, during his experiments, suppressed the flow of gastric juice by merely showing a whip. It is a "conditioning" of a reflex, and is feasible with any dog.

This fact makes manifest how erroneous is the common opinion that the "conditioning" of affective reactions in a morbid fashion require previous morbidity for its accomplishment. This is usually stated in the formula that traumatic neurosis occurs only in the predisposed. The real factor in its induction is the momentum of the conditioning stimulus. A homely illustration is that used by the penetrating dramatist August Thomas, in "The Harvest Moon," where he makes a hard-headed lawyer, against his will, the rapid victim of the suggestion that he is dangerously ill.

Of course, it should be obvious that the patient, although a victim

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of imagination, may become really ill physically; just as it is obvious that Pavlov's dog, a mere victim of imagination, is ill therewith to the extent of an incapacity to secrete gastric juice, which means very ill indeed. Indeed psychogenetic physical illness of this kind may reach such a degree as to cause death; as has been experimentally shown by Crile and others.

Furthermore, if the reactions have gone too far, the removal of the cause will not save the life of the animal. Short of death, secondary organic changes may occur, so that recovery will be incomplete.

But even when the stimuli are insufficient to produce organic changes, the cure of the subject demands more than a mere material removal of them; for the stimuli live in memory, where they have become associated with many elements of the environment; so that the cause is not *really* removed until a complete reconditioning is effected of all the associational reactions which have gathered around the initial dread-bringing circumstance.

For instance, a tachycardia produced by fear, if long continued, should not be less injurious to the heart and blood vessels than is excessive athletics; an outpouring of an excess of substances from the adrenals should just as likely produce vessel sclerosis or exhaust the gland when it is the result of chronic anxiety, as when it is due to a physiological stimulus of more direct kind; a dyspepsia or chronic constipation is just as likely to lead to malnutrition and toxemia when it is the result of mental depression as when it is due to sluggish habits or disease.

The mechanism by which the modification of reaction occurs is usually that of suggestion. The dog which secretes gastric juice when it hears a bell does so because of the suggestion that meat will be presented him forthwith. It does not know why a bell brings meat; it mistakes it for a reaction of cause and effect, like that of a wetting when it enters the water. The process is not one of genuine reasoning. The person who is hypochondriacal after an accident has as little reason in calling accident cause, and neurosis effect, as has the dog in believing bell cause and meat effect. It is belief without proper ratiocination, received blindly, credulously, from someone else without criticism, that is, by suggestion. This is, unfortunately, the commonest method by which opinions are acquired by human beings. Indeed the vast majority acquire their beliefs in no other way; and only a few superior minds have eliminated this manner of appraising the facts they encounter. It is small wonder then that the conditioning of reactions becomes morbid so easily; for we find morbidity all around. It is often

dramatically impressive and frequently comes home to us by associations with the deepest affections. Hysteria, then, which is merely the "effects of suggestions when these cause disease," is necessarily very widespread, and the circumstances that give rise to it and the forms that it takes are proportional to their impressiveness, which means suggestive power, and in accordance with fashion and the zeitgeist of the country and time.

The mechanism is always the same and the victim is not aware of the systems of ideas and associated affects which constitute his psychosis.

*The Induction of Suggestion Psychoses. The Emotional Consequences. Cases and Discussions.*

In the gross these are most clearly manifest in what our attitude of detachment easily enables us to label the superstitions of alien peoples. Thus the sufferings induced by the "gnawing fox" of the Japanese are made possible only by a deeply rooted belief in its existence. For example, a woman after labor declared she felt the "fox coming"; this was her interpretation of the after-pains she felt. The great parade by the neighbors in attempting to prevent the fox's attack only reinforced the patient's apprehension and soon a horrible convulsion signalized her seizure by the fox. Terror and convulsions held her until the exorciser was called. He declared that the fox would leave her at four o'clock the next day provided certain offerings were placed on a certain tomb for it to eat. This simple suggestion caused her to dismiss her terror suddenly at the hour designated. The crudeness of the mechanism in the case of this ignorant peasant need not make us smile, for our Western case is very little better, as the following illustration shows:

It is the familiar case of an incapacitated railroad employe to whom we were called to determine whether or not there was organic disease of the nervous system. The fact that there was not is shown elsewhere in the full report of the case.<sup>1a</sup> The psychogenesis of the man's condition was evident in his fixed idea, due to the common belief of railroad employes that serious nervous disease may slowly ensue upon an accident. This common belief was strengthened by the injudicious sympathy and inquiries of his friends and the doubtful prognosis of some medical men he had consulted. He "answered a thousand questions a day," he "did not know what to think about his health," and worried about his condition and circumstances; he was

<sup>1a</sup>Medical Record N. Y., 1909, May, also Trans. Internat. Cong. Industrial Accidents, Rome, 1909.

"too much preoccupied with his health even to miss his wife"; he had lost weight and appetite, had a sore throat, and wept much, and finally his attitude was strengthened by the lawyers who sought redress for him. He was cured within a month as a result of one interview, during which he was instructed in the role of ideas over bodily activity and the effects of worry and anxiety upon nutrition. In the certificate it was stated "there is and has been no disease of the spinal cord or peripheral nerves at play in the induction of any of the symptoms which I find. The erroneous belief that there has been such an injury powerfully contributes to the anxiety which maintains his present state."

The role of the idea of "shock" in perturbing this man's emotional life is strictly comparable with that of the gnawing fox of the Japanese folklore. In both cases, too, there was the period of reflection and incubation of the morbid notion, a familiar feature of such cases which has been insisted upon by Souques. It is rare that the symptoms ensue until after a time of meditation, during which the complex is systematized.

The cure was not so simple as that of the Japanese exorcist. But it was a definite one, for the railroad brakeman was taught to understand the mechanism of his affection and thus to overcome any future harm from the credulity in which he had grown up.<sup>2</sup> The Japanese woman, on the other hand, remained liable to another attack, as her belief in the fox was only reinforced by the manner of its removal.

A contrasting case where therapeutics failed will further push the lesson home. A government employe was injured by a falling case and remained barely able to walk even after his bruises of head and shoulder had healed. Called in consultation, we explained the mechanism of his present incapacity and directed how to remove it. His family physicians' acquiescence to our directions was only formal, as his bent was not psychological enough to grasp the principles at work. The fearful solicitude of the man's wife too constantly reinforced his timidity, so that in spite of a considerable temporary improvement he did not progress to full recovery, but remained lachrymose, depressed, and relatively incapable on account of the persistence of his false belief about his health and powers.

*Loss of "Nerve" After An Accident.*

Again, a railroad freight conductor was sent to me for care from North Carolina by the Southern Railway Company. He had fallen

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<sup>2</sup>Five years later the man continued at work, well.

off a truck and had been much shaken and bruised. Unlike most persons in such case he did not complain of pain or paralysis, but merely stated, what was truth, that he "could not sleep, and remained in a state of nervous agitation which would even cause him to cry at times and made life unbearable, from incapacity, weakness, and mental depression, so that he felt utterly unable to return to work, feeling that he could not perform it." In his happy domesticity, there were no extrinsic psychological factors except the mental habitus of hyper-conscientiousness of ambitious type. There was an entire absence of roughness often seen in men of that occupation. In its essence the situation was that the man felt unable to, and did not want to, lead again the arduous life of a railroad man, for which he was in reality temperamentally unsuited.

But even in this case adaptation to the unpleasant environment might have been accomplished had not the pernicious influence of the struggle for indemnification preponderated so as to interfere with psychological reconstruction. Instances of this kind are numerous. Isolated examples spring to the mind of every railroad surgeon; but an extensive comparison between cases equal in value to a deliberate experiment is best afforded by the observation of a train wreck in which 200 passengers were injured, about half of them severely. Only about 20 of the passengers developed traumatic neurosis. Some of these received heavy damages, upon which their health was immediately restored. In one case, however, a cure was effected by Dr. Bevan,<sup>3</sup> the observer, without recourse to a lawsuit; but even this was done against the active protestations of the patient and only by extraordinary perseverance and determination on the part of the physician, whose method of persuasion was so insistent as to make the patient weep.

#### *Compensation Not Curative.*

But it is not always that the indemnity effects the cure. There is a case well known in Washington where \$17,000 was allowed by the court to a man in whom a street car accident induced the belief that he was incapable of locomotion. This lasted for seven years, during which the patient went about in a wheel-chair administered to by a solicitous wife. His wife's belief that he could not walk was rudely disturbed after the plaster had fallen from the roof while they were asleep in bed one night, when she found her husband seated in the corner of the room twelve feet from the head of the bed. She

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<sup>3</sup>J. A. M. A. 1901.

argued that if he could walk while asleep at night he could walk while awake by day. This he did in trembling fear after insistent persuasion by her, and eventually recovered a few days subsequent to my seeing him.

*The Psychological Criteria of Simulation and Hysteria in Relation to Indemnity.*

It would be idle to pretend that these are deliberate simulators for gain. They were honest pretenders, just so much as is any genuine hysterical the victim of a suggestion that he is incapacitated. These cases must be carefully differentiated from those who intentionally imitate symptoms in the hope of gain, even although the gain be merely the sympathy, attention, or notoriety from other people. The first type we call malingerers, the second mythomaniacs, fantasticals, or pathological liars; neither of these types has immunity from the psychological reaction of suggestibility, which may eventuate in the genuine medical hysteria.

The initiator of symptoms may, of course, be an actual accident or disease; and equally so it may be derived from the mere idea of injury or disease, so that the clinical problem to be analyzed may be exceedingly complex. Besides this, the patient may refuse access to his psychological groundwork, perhaps merely on account of shyness or shame of thoughts concerning which he fears misunderstanding or ridicule, and entirely apart from any question of venality. This phenomenon is found very commonly in psycho-analytic work; and it is the shame-faced reticence of patients which has led to the need of the use by some analysts of mechanistic expedients, such as the association-experiment (Jung), the dream unravelling, and the free-flow association.

These genuine psychoneurotics are entirely curable, quite apart from any question of indemnity in itself; but the struggle for indemnity cannot be given up without loss of self-respect in the implied confession of dishonesty or at least of the gross error of psychological interpretation concerning the role of the accident itself as the provoker of the illness; so that there is a preoccupying search by the patient for facts to ratify his belief that the accident had damaged him. This inevitably leads to imaginations, exaggerations and falsifications inevitable for a mind not scientifically trained. It is only when the patient has a glimmering of his mistake that he begins in desperation to defend it by conscious self-deception in order to bolster up a psychosocial attitude the negation of which would, he believes, be derogatory.

The construction of this state of mind is thus described in my article before the 1913 International Congress of Medicine:<sup>4</sup>

"Especially prone to this damaging sequence are persons whose imagination has been made rampant by the cultivation of the credulous fears of childhood: their fear-reaction to that which they do not understand is a dominant one, and they are easily beset by an idea linked with fear. The commonest of the fears which result from accident or injury is that of bodily harm. It is difficult for a person of this type, when ignorant of his own structure and functions, to shake off the foreboding created by an impressive catastrophe: and it must not be forgotten that what others regard as trifling the victim may look upon as catastrophic, judged by its possible effect on him. Prepossession by the idea of one's own disability is an inevitable consequence. This leads to abstraction from and inattention to the affairs of ordinary life which, if not trifling by comparison in the patient's mind at least cannot claim the attention properly needed. Hence ensues the well-known diminution of the capacity to think, work, or take part in social life. This incapacity, when the patient becomes aware of it, leads him to still further accentuate the result of his injury and thus to augment his alarm about his health. Thus is constituted the vicious circle of hypochondria. Even a nosophobia may ensue, such as the fear of lost manhood, insanity, paralysis. Alarm at this impending disaster must, of course, be distinguished from the primary alarm due to the accident itself."

*Forensic Presentibility.*

This mechanism is so simple that it can clearly be grasped by any intelligent person even without medical training; it has been very convincingly popularized by Mr. Addington Bruce in the "Outlook," of May, 1914.

There should be no difficulty, then, in convincing a court of the nature of these cases and of their curability when properly dealt with, and this should lead to an equitable appraisalment for damages for loss of time and distress of mind. That this is not at present the case we believe to be due to the want of knowledge of many expert witnesses concerning the whole subject of the psychoneuroses. The point of view here set forth is entirely foreign to a mind of which the habit has been to be content with the farrago of confusions which was all that the older text-books afforded concerning functional nervous affections. Besides this the appraisalment of the functional

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<sup>4</sup>Transactions of Neurological Sect., also in Cleveland Med. Jour. 1914.



nervous affection is inextricably interwoven with the whole subject of neurological diagnosis. A physician who is not thoroughly conversant with modern neurology is sure to give the jury a false impression of the status of his case unless he strictly confines himself to concrete facts observed by himself and leaves their interpretation to the neurological expert who follows him. In the conduct of such cases, counsel should entirely discard the antiquated and misleading accounts in text-books of medicine and neurology; the issue should be presented solely by concrete facts elicited from the patient himself as observed by medical men and others, and the interpretation of these aside from all technical concepts, in the plane of simple good sense, which means good psychology. A striking instance of this error has just transpired in the District of Columbia, where a case carefully outlined on this basis was thrown into confusion by the introduction of a general practitioner who, without adequate knowledge, took it upon himself to instruct the jury concerning neurological and psychopathological interpretations of which his hazy knowledge was only second-hand. It was the case of a woman who after a trifling glass cut and a knock on the elbow gradually developed a complete flaccid paralysis of the right arm. The allegation of neuritis was easily disproved; the joints were not diseased; the spinal cord was intact, and the brain centre was not damaged. These were shown by complete mobility, absence of wasting, presence of the reflexes, without exaggeration or spasticity. The psychogenetic nature of the paralysis was very clear and the patient's own physician fully admitted this in the witness box, and also that such paralyses often occurred without traumas of the body at all. Facts of this kind are really not difficult to demonstrate to a jury if a properly trained psychopathologist is employed.

This was demonstrated very clearly in the case of *Hill v. Chicago, Milwaukee & St. Paul Railroad* at Redwing, Minnesota, December, 1911. Here the psychogenetic nature of an affection which simulated lameness alleged to be due to sacro-iliac and lumbar injury, was so clearly shown the jury, that instead of \$15,000 damages demanded the allowance given was merely \$1,500 for loss of time and stress of mind. This was a particularly "dangerous" case from the forensic aspect; but the railroad had become weary of paying indemnities for psychological accidents, and made this a test case. The crucial point depended upon a demonstration by the neurologist that the attitude and movements of the patient did not conform to a syndrome which should have been present had the injury been where it was believed

to be. This, along with the integrity of the reflexes and lack of wasting, convinced the jury that no lesion was present.

*Report of the Examination of Mr. C. L. Hill, as Communicated to  
the Chief Counsel of the Chicago, Milwaukee  
& St. Paul Railway Company.*

In the presence of Drs. Dunlop, Dolman and Lemon, I examined Mr. Hill on December 8th, finding the following:

*Motility*—This was not impaired except when interfered with by his complaint of pain in the right lower lumbar region behind. Thus while lying on his back, he could raise the lower extended limbs both at once from the couch without the expression of pain. Likewise, while lying on his face with the pelvis supported by a pillow, he could fully extend at the hip both lower extremities without complaining, raising both from the couch at once, not at all an easy performance and needing powerful contraction of the sacro lumbalis, thus dragging severely upon the vertebrae. Either thigh could likewise be abducted without the elicitation of pain in the back. While standing, he was able to incline backwards to the full normal extent without pain, but complained of severe pain in the back while straightening up from this position. In bending forward with straightened knees trying to touch the floor, flexion was restricted by his complaint of pain, his hand reaching only a little below the knees. But the restriction of movement was less in the spine itself than in the flexion of the hip. However, on passive movement while recumbent, there was no restriction in the hip; and it was indeed possible to straighten the whole limb to an angle of 80°. The deep reflexes were over-active, including those of the arm; but there was no inequality in the responses of the two sides. There was no ankle clonus or other sign of disease of the motor tract; for the cutaneous reflexes were present, although the reaction on stroking the sole of the foot was very slight. The reflex of the pupil to light was present.

*Sensibility*—Great tenderness was complained of in the lower part of the right lumbar region. This was provoked not only by pressure upon the transverse processes of the 4th and 5th lumbar vertebrae, but also in the sacro iliac joint when pressed upon. Indeed, the patient shrank a great deal and contracted the gluteal and spinal muscles, more especially of the right side, when moderate pressure was made upon the crest of the ilium laterally, or upon the lower ribs of the right side. A similar reaction occurred on tapping the spine with a soft percussion hammer. When the skin was pricked

with a pin, the whole of the right side was declared to be tender; while on the left side, the prick of a pin was said to feel dull. The answers, however, were contradictory: as at first the patient declared that the pin prick felt sharp on the inside of the left arm and forearm as well as on the neck; while on repeating the experiment after again pricking the right side, he declared that the prick felt dull. Although the patient had not complained of tenderness at the time I stroked the sole or the sub-malleolar region, yet during my examination of the sensibility he declared that a prick in those regions was very painful. This proves that the tenderness of which he complained is only present during the patient's attitude of expectant attention towards it. It is psychogenetic hyraesthesia.

He declared that he felt no pain on the left side when I pinched sharply the tendo achilles or the calf, while on the right side great tenderness was complained of when I did so.

The patient when responding would frequently use the expression "I can conscientiously say that it is dull," referring to the pricks on the Left side. The significance of this remark is its superfluity; as no question of his sincerity had been made. His reply implied a doubt in his own mind to say the least. I looked upon the expression as an index of a mental attitude anxious to feel corroboration of a feeling less than sure. His replies concerning the dull feeling thus correspond as to psychological cause with those concerning the over sensitive feeling on the opposite side, that is they are purely the product of an erroneous mental attitude about himself, whether this is honestly believed or not.

I interpret these sensory changes as in part due to the conditions of the examination, which in themselves were such as to powerfully *suggest* a difference of feeling on the two sides. His reactions indicated this; for his replies to pricks on the Right side were markedly prompt and staccato, and the jerking and twitches which his muscles gave there were not the simple reflexes of a muscular group stimulated by irritation of the sensory nerve which commands them, but were the movements such as occur in intentional shrinking from an unpleasant stimulus. Besides this, they did not occur when pressure was made without the patient's attention being arrested. For example, when I manipulated his limbs on the couch while placing them in position to test his motor power, no shrinking took place although I exercised considerable pressure on the calf which later jerked wildly from giving it a slight squeeze.

It was evident therefore, that the hyperaesthesia, if not feigned,

was at least mental in origin; that is to say, it arose from the patient's active preoccupation by the notion that he was indeed hypersensitive upon that side of the body.

The possibility of a crushed or dislocated vertebra irritating one of the nerve roots was considered; but none of the symptoms found were consistent with this supposition; for the greater degree of tenderness complained of was not confined to the distribution of any one or more root nerves, and did not comprise the whole area governed by any spinal root. Besides it is not likely that a crush of a spinal root would have failed to implicate some motor fibres.

I was shown some Rontgen ray photographs of the lumbo-sacral region. In these, there was an apparent asymmetry of the 4th lumbar vertebra, the body of which appeared to project beyond the intervertebral disk about  $\frac{3}{16}$ ths of an inch on the right side; while on the left side there was what appeared to be an unevenness in the position of the articular process, while the intervertebral disk appeared narrowed on that side. The transverse process of the 5th lumbar vertebra was  $\frac{1}{2}$  an inch below the level of the iliac crest in the left side while it was above it on the other side. Posteriorly the spine of the fourth lumbar vertebra appeared to be tilted but not displaced, towards the left. In these pictures, however, there appeared to be a scoliosis of the sacral spine which was not shown on the patient himself nor upon a photograph of the pelvis taken by another radiographer. I was therefore led to infer that the appearance in the lumbar region might have been due to an asymmetrical position of the patient during exposure; but I cannot affirm this positively.

The above facts show clearly that there is no organic disease of the nervous system accountable for the hyperaesthesia on the right side and the hypoaesthesia on the left side; for these if due to organic changes would necessitate severe destruction of roots or central nervous system and this would necessarily be accompanied by atrophy of the muscles, weakness, or spasmodicity and inequalities of the reflexes; none of which are present. Besides which, the fact that there are differences in the upper part of the body is inconsistent with the effects of an injury confined to the lower part of the back.

Although Dr. Dunlop tells me that the patient was at once much relieved when his back was strapped, which was a presumption against an imaginary pain, yet I do not see how the X-ray appearance can account for the pain of the distribution just described; for if there is a crushing of the left side of the spine, one would expect the pain on that side also.

So that I am compelled to believe that the pain and stiffness in the back may be of the same nature as the right-sided tenderness, viz., purely mental. In that case, all the *present* symptoms may be the effects of an insistent imagination that a serious injury to the right side of the back has taken place.

The treatment would then consist of the patient's re-education into a correct belief concerning his real condition. This would probably be a gradual process; although some cases recover quite rapidly.<sup>5</sup>

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#### LATER REPORT SUBSEQUENT TO THE TRIAL IN DECEMBER.

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##### *April Twenty-first.*

As shown by my evidence at the trial of C. L. Hill, his symptoms did not correspond to those occurring in strain of the right sacro-iliac joint. For in this condition there is no anaesthesia such as Mr. Hill complained of. The hyperaesthesia of sacro-iliac disease is not in the same parts complained of by Mr. Hill; nor does it so markedly vary when the patient's attention is distracted. The restriction of movement due to the pain of sacro-iliac strain was not shown by C. L. Hill.

He did show a restriction of movement such as would occur in a person who believed that his back could not move freely. Indeed, during the trial he sat in a chair leaning somewhat towards his left, towards a table, thus putting strain upon the ligaments which hold the right sacro-iliac joint in position.

Had there really been pain in this joint he would have been compelled to lean to the right in order to relax these ligaments.

It is significant that he did not visit me in Washington after the trial, although I had informed him that I would cure him in a month, and had also informed Dr. Dunlop of this.

Improvement of such cases after operation is not singular: for a powerful psychic impression is thus made; and this changes the patient's attitude regarding his physical state.

In a patient who is not feigning, cure can be more rationally accomplished by exercises designed to teach the patient that he is not incapacitated as he believes.

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<sup>5</sup>See my report to International Congress on Industrial Accidents, Rome, 1909, and *International Journal of Surgery*, July, 1909, "A Case of Traumatic Neurosis Illustrating Successful Psychotherapy," also in *Wisconsin Medical Journal* at later date.

With regard to the operation itself, the only objective fact in support of the surgeon's opinion, which is at variance with that he held before trial, was the crack which he heard, and which his assistant felt.

Of course, the crack felt and heard during the operation described by the surgeon proves nothing more than that during the manipulations some joint around the pelvis failed to move smoothly. Such crackings are not infrequent even in normal individuals, as upon sudden stooping or stretching, during which joints go to the extreme of their normal excursion.

*Trauma Unessential to Psychoneurosis.*

In conclusion, let me emphasize the importance of the fact that functional nervous syndromes which occur after accidents differ in no way from those found in persons who have been subjected to no accident at all. The accident then is merely a red herring across the trail of the real cause of the psychoheurosis

For additional discussion of this matter see the following by the same author, more especially number 4.

(1) Traumatic Neuroses and Babinski's Conception of Hysteria, Transactions of Congress of Industrial Actions, Rome, and Medical Record, 1909.

(2) Successful Psychotherapy of Traumatic Neurosis, Amer. Jour. Surg., 1909.

(3) Idea and Affect in Traumatic Neurosis, Jour. Abnor. Psycho., 1910; also Charlotte Med. Jour.

(4) Psychic Effects of Accidents, Transactions of Southern Railway Surgeons, 1912, and Monthly Cyclopedic, and N. Y. Med. Jour. 1913, where many cases are related not due to trauma.

(5) Occupation Neurosis, International Congress of Hygiene, 1912; Medical Record, 1913; Transactions of International Congress of Medicine, 1913; Cleveland Med. Jour., 1914.

(6) Treatment of Hysteria, Jour. Amer. Med. Assoc., November, 1912.

(7) Hysteria and Pseudohysteria, Amer. Jour. Med. Sci., September, 1910. The Traumatic Neurosis do 1915.

(8) Mental Healing, British Med. Jour., Vol. II, 1913, and Ill. Med. Jour., October, 1914.

(9) Treatment of Psychoneurotic Patients, Cleve. Med. Jour., 1914.